AUTHOR INDEX, VOLUME 5

van Aartsen, J. J., and Stein, R. S.: The scattering of light by deformed ringed spherulites, 901
Adams, G., and Stein, R. S.: Orientational changes in crystalline polychlorotrifluoroethylene copolymer films, 541
Andrews, E. H., and Reed, P. E.: Hydrogen evolution from natural rubber during tensile tests, 317
Anwaruddin, Q., and Santappa, M.: Anthraquinone sulfonates as photoinitiators of vinyl polymerization, 361
Aoki, S.: see Otsu, T.
Aoshima, K.: see Iwakura, Y.
Asahina, M.: see Okuda, K.
Asai, M.: see Tazuke, S.
Aso, C., and Tagami, S.: Cyclopolymerization of o-phthalaldehyde, 217
Baer, E.: see Kiss, K.
–: see Koutsky, J. A.
Bair, H. E.: see Huseby, T. W.
–, and Salovey, R.: The melting behavior of the form III of polybutene-1 single crystals, 429
Baldwin, M. G., Johnson, K. E., Lovinger, J. A., and Parker, C. O.: 1,3-Dipolar cycloaddition polymerization of compounds containing both azido and acetylene groups, 803
Bassiri, T. G., Levy, A., and Litt, M.: Polymerization of cyclic imino ethers. I. Oxazolines, 871
Bekkedahl, N.: see Wood, L. A.
Bell, V. L.: heteroaromatic polymers via salt intermediates, 941
Benoit, H.: see Grubisic, Z.
Berger, M. N.: see Mackie, P.
Berliner, C.: see Jaffé, J.
Bevilacqua, E. M.: Carbon black as an elastomer antioxidant. I. Effect of vulcanizing systems in SBR, 1109
–: Structure of natural rubber, 601
Bevington, J. C., and Harris, D. O.: Reactivities of acrylates and methacrylates, 799
Blumstein, A.: Branching in Poly(methyl methacrylate) obtained by γ-ray irradiation, 687
–, and Blumstein, R.: Association in two-dimensionally crosslinked poly(methyl methacrylate), 691
Blumstein, R.: see Blumstein, A.
Bolon, D. A., and Gilbert, A. R.: Thermal polymerization of phenoxy phenols, 277
Breitenbach, J. W., and Fučik, I.: Proliferous growth in crosslinked glasslike polymers, 993
Bremer, B.: see Prince, M.
Bricman, G.: see Jaffé, J.
Brooks, B. W.: Graft copolymers of rubbers and polystyrene prepared with "living" polymers, 641
Brückner, G.: see Giannini, U.
Buchanan, D. R., and Miller, R. L.: Significance of sizes inferred from small-angle x-ray studies, 771
Burnett, G. M., Ross, F. L., and Hay, J. N.: Crystalline poly(vinyl bromide), 271
Burns, F. W., O'Connor, R. M., and Pepper, D. C.: Radiation-induced ionic polymerization of styrene, 1059

Campbell, D., and Turner, D. T.: Radiolysis of poly(ethylene terephthalate): Influence of air, 471
Carr, S. H.: see Kiss, K.
Casassa, E. F.: Equilibrium distribution of flexible polymer chains between a macroscopic solution phase and small voids, 773
Cassata, A.: see Giannini, U.
Cernia, E. M., Mancini, C., and Saini, A.: An application of high speed membrane osmometry to the unfractionated vinylpyrrolidone–vinyl acetate copolymers, 851
Chen, H. Y., and Field, J. E.: Configuration of isoprene structure in butyl rubber by time-averaging high resolution nuclear magnetic resonance, 501
Chu, H.-D.: see Kitamaru, R.
Ciardelli, F.: see Pino, P.
Coll, H., and Prusinowski, L. R.: Calibration in gel permeation chromatography, 1153
Combs, R. L.: see Coover, H. W., Jr.
Comyn, J., Dainton, F. S., Harpell, G. A., Hui, K. M., and Ivin, K. J.: Rate constant for the propagation of the polymerization of α-methylstyrene by the free anion in tetrahydrofuran and tetrahydropyran, 965
Coover, H. W., Jr., Combs, R. L., and Joyner, F. B.: Discrepancy in active site concentrations estimated using low-conversion and high-conversion kinetic data, 1037
Craig, T. O., and Tyrrall, E.: Polymeric peroxide of methyl atropate, 955
Culbertson, B. M., and Murphy, R.: Aromatic poly(amide-hydrazides) and poly(amide-1,3,4-oxadiazoles), 807
Dainton, F. S.: see Comyn, J.
D'Alagni, M.: see Goodman, M.
Dass, N. N., and George, M. H.: Iron(III)–chloro complexes in N,N-dimethylformamide/styrene systems, 1119
Dawans, F.: see Durand, J. P.
Del Franco, G. J., Guagliardo, M., Loewrigkeit, P., and Georgalas, N.: Polyaddition reactions of N,N′-bis-1,2-alklyenamides with dicarboxylic acids, 487
Desper, C. R., and Stein, R. S.: Randomization of orientation of films and fibers, 893
Di Corato, A.: see Porri, L.
Diefenbach, H., Ringsdorf, H., and Wilhelms, R. E.: Preparation and polymerization of S-vinylsulfonyl ylids, 1039
Dodd, J. A.: see Smith, B. J. K.
Dunkel, W.: see Rothe, M.
Durand, J. P., Dawans, F., and Teyssie, Ph.: Polymerization by transition metal derivatives. IX. Factors controlling the cis/trans orientation in the 1,4-polymerization of butadiene, 785
Eden, C., and Feilchenfeld, H.: The reaction between triethylaluminum and titanium trichloride, 537
Ehrlich, P., Kern, R. J., Pierron, E. D., and Provder, T.: On the structure, crystallinity, and paramagnetism of polyphenylacetylene, 911
Eliezer, N.: see Utracki, L.
Fadner, T. A.: Electric field polymerization of liquid vinyl monomers, 969
Feilchenfeld, H.: see Eden, C.
Fetters, L. J.: see Wall, L. A.
Field, J. E.: see Chen, H.Y.
Fielding-Russell, G. S., and Wetton, R. E.: New information on

polymer crystallization: Dielectric permittivity of poly(tetramethylene oxide), 761
Fischer, E. W., Goddar, H., and Schmidt, G. F.: A remark on the surface structure of polyethylene single crystals, 619
Fischer, T.: see Kinsinger, J. B.
Flynn, J. H., and Wall, L. A.: Initial kinetic parameters from thermogravimetric rate and conversion data, 191
Fock, J.: Some effects of γ-irradiation in polytetrafluoroethylene filled with carbon black, 635
Frank, W., Goddar, H., and Stuart, H. A.: Electron microscopic investigations on amorphous polycarbonate, 711
Frazee, J. D., and Tucker, J.: Determination of rubber dynamic properties using a sinusoidal vibrator and weighted specimen, 653
Freeburger, M. E.: see Stille, J. K.
Fučik, I.: see Breitenbach, J. W.
Fujii, H.: see Saegusa, T.
Fujii, K.: Tacticity and infrared spectra of poly(vinyl acetate), 551
Fujimoto, S.: A topochemical study of the polymerization of terephthalonitrile oxide, 301
Furlani, A., Moretti, G., and Guerrieri, A.: Aromatization reactions of acetylenic hydrocarbons: The $TiCl_4/AlEt_2Cl$ catalytic system, 523
Furukawa, J.: see Matsumoto, T.
–: see Taniguchi, M.
–, Kawabata, N., and Kato, A.: Asymmetric-selection polymerization of propylene sulfide, 1073
Gallazzi, M. C.: see Porri, L.
Gardner, D. G., and Henry, G. A.: Sensitivity of mixtures of syndiotactic and isotactic poly(methyl methacrylate) to chain scission induced by ultraviolet light, 101
Gaylord, N. G., and Matyska, B.: Polymerization of 2,3-dichloro-1,3-butadiene, 131
Georgalas, N.: see Del Franco, G. J.
George, M. H.: see Dass, N. N.
Gesser, H. D., and Long, R.: The Adhesion of "low energy" solids, 469
Giannini, U., Brückner, G., Pellino, E., and Cassata, A.: Stereospecific polymerization of monomers containing oxygen and nitrogen with Ziegler-Natta catalysts, 527
Gilbert, A. R.: see Bolon, D. A.
Gillman, K. F., and Senogles, E.: Graft copolymers with short side chains, 477
Gladyshev, G. P.: see Rafikov, S. R.
Goddar, H.: see Fischer, E. W.
–: see Frank, W.
Goodman, M., and D'Alagni, M.: Investigations of poly-S-lactic acid structure in solution, 515
Gopalan, M. R.: see Mandelkern, L.
–, and Mandelkern, L.: Degree of crystallinity of linear polyethylene from wide-angle x-ray diffraction, 925
Grieveson, B. M.: see Mackie, P.
Grubisic, Z., Rempp, P., and Benoit, H.: A universal calibration for gel permeation chromatography, 753
Guagliardo, M.: see Del Franco, G. J.
Guaita, M.: see Trossarelli, L.
Guerrieri, A.: see Furlani, A.
Guthmann, A.: see Schulz, R. C.
Haack, R.: see Rembaum, A.
Hachihama, M.: see Shono, T.

Hagiwara, M.: see Mitsui, H.
Hamb, F. L., and Trent, L. C.: Synthesis of cyclic tris(ethylene terephthalate), 1057
Harpell, G. A.: see Comyn, J.
Harris, D. O.: see Bevington, J. C.
Hasegawa, M., and Suzuki, Y.: Four-center type photopolymerization in the solid state: Poly-2,5-distyrylpyrazine, 813
Hatada, K., Ota, K., and Yuki, H.: NMR signals of tetrads of monomer units in poly(methyl methacrylate), 225
Hatano, M.: see Kambara, S.
Hay, J. N.: The polymerization of ϵ-caprolactam: initiation by water, 577
–: Triethyl aluminum dissociation: A comment on the electrical conductivity investigation, 79
–: see Burnett, G. M.
Hayakawa, K., Kawase, K., Yamakita, H., and Inagaki, S.: γ-Ray-induced polymerization of some vinyl-substituted silanes, 1077
Hayashi, K.: see Miki, T.
–: see Tsuji, K.
–: see Ueno, K.
–: see Yamoka, H.
Hellman, M. Y.: see Salovey, R.
–: see Winslow, F. H.
Henry, G. A.: see Gardner, D. G.
Hermann, A. M.: see Rembaum, A.
–, and Rembaum, A.: Photovoltaic effect in poly-N-vinylcarbazole iodine charge transfer complex, 445
Higashi, H., and Watabe, K.: Polymerization of α-olefins with $AlEt_2OCH_2CH_2NRR'$–$TiCl_3$ system, 681
–, –, and Namikawa, S.: Polymerization of vinyl chloride with vanadium oxytrichloride–aluminum compound system, 1125
Higashimura, T.: see Miki, T.
Hirai, H.: see Ochiai, E.
Hirooka, M., Yabuuchi, H., Morita, S., Kawasumi, S., and Nakaguchi, K.: Complex copolymerization. I. Novel equimolar copolymers of acrylonitrile and olefins, 47
Hirose, T.: see Takahashi, A.
Holdsworth, P. J., and Keller, A.: The crystallization of ethyl and methyl branched copolymers of polyethylene from dilute solution, 605
Hori, Y.: see Takahashi, T.:
Hossain, T. M. A., Maeda, H., Iijima, T., and Morita, Z.: Diffusion of cationic dye into polyacrylonitrile, 1069
Hui, K. M.: see Comyn, J.
Hunter, W. L.: Lability of the α-hydrogen in polyacrylonitrile, 23
Huseby, T. W., and Bair, H. E.: Melting of polyethylene prepared from stirred xylene solutions, 265
Ichikawa, T.: see Iwasaki, M.
Iijima, T.: see Hossain, T. M. A.
Ikeda, S.: see Tazuke, S.
Imanishi, Y.: see Tsuji, K.
Inagaki, S.: see Hayakawa, K.
Instone, A. T.: see Smith, B. J. K.
Ishida, Y., Togami, S., and Yamafuji, K.: Dielectric low-temperature absorption in stereoblock poly(methyl methacrylate), 745
Ito, T.: see Iwakura, Y.
Ivin, K. J.: see Comyn, J.
Iwakura, Y., and Noguchi, K.: A synthesis of polyguanidines by polyaddition reaction of biscarbodiimides with diamines, 821
–, Toda, F., Katsuki, H., and Watanabe, H.: Polymerization reaction of α-methylstyrene tetramer with electron transfer from carbanion to ketone, 1013

–, –, Ito, T., and Aoshima, K.: Stereospecific polymerizations of 2,3-epoxy and 2,3-epithiopropyl methacrylates, 29
–, –, and Torii, Y.: A novel synthesis of polyamideamines from 5-oxazolones, 17
Iwamoto, M., and Yuguchi, S.: New catalyst for the vinyl type polymerization of butadiene and isoprene, 1007
Iwasaki, M., Ichikawa, T., and Toriyama, K.: Electron spin resonance of trapped free radicals and the photoinduced radical conversion in γ-irradiated isotactic polypropylene, 423
Jackson, J. F.: see Mandelkern, L.
–, and Mandelkern, L.: Dimensional properties of polyethylene crystals formed during isothermal crystallization from dilute solution, 557
Jaffé, J., Bricman, G., and Berliner, C.: Evaluation du degré d'hydrolyse du polyméthacrylate de méthyle par la methode bidimensionnelle, 153
Joh, Y.: see Kotake, Y.
–: see Yoshihara, T.
Johnson, K. E.: see Baldwin, M. G.
Jovanovic, S.: see Meyerhoff, G.
Joyner, F. B.: see Coover, H. W., Jr.
Kagiya, T.: see Mitsui, H.
Kambara, S.: see Takahashi, A.
–, Hatano, M., Sera, N., and Shimamura, K.: Syntheses and electric properties of poly(α-ethinyl naphthalene), 233
Kanari, K.: see Ozawa, T.
Kanzawa, T.: see Yokoo, M.
Kataoka, T.: Onset of non-Newtonian flow: A correlation with an average molecular weight, 1063
Kato, A.: see Furukawa, J.
Katsuki, H.: see Iwakura, Y.
Kawabata, N.: see Furukawa, J.
–: see Taniguchi, M.
Kawaguchi, T.: see Stein, R. S.
Kawai, W.: Molecular orbital considerations on the alternate copolymerization of 4-methyl-1,3-dioxene-4 with maleic anhydride, 1103
Kawasaki, N.: see Utsunomiya, H.
Kawase, K.: see Hayakawa, K.
Kawasumi, S.: see Hirooka, M.
Keller, A.: see Holdsworth, P. J.
Kenjo, H.: see Yoshino, T.
Kern, R. J.: see Ehrlich, P.
–, and Schaefer, J.: On the existence of a free-radical organoboron complex in the polymerization of methyl methacrylate, 157
Kimura, I.: see Stein, R. S.
Kinsinger, J. B., Fischer, T., and Wilson, C. W., III: Microstructure in copolymers. II. Analysis of tetrad sequences in vinylidene chloride–isobutylene copolymers by NMR spectroscopy, 285
Kiss, K., Carr, S. H., Walton, A. G., and Baer, E.: Molecular structure in the epitaxy of polyoxymethylene, 1087
Kitahama, Y., Ohama, H., and Kobayashi, H.: Polymerization of 2,5-dimethyl-3,4-dihydro-2H-pyran-2-carboxyaldehyde (methacrolein dimer), 1019
Kitamaru, R., Chu, H.-D., and Tsuji, W.: The crystalline structure of a slightly crosslinked polyethylene crystallized in the stretched state, 257
Knight, G. J.: Thermal degradation of polystyrene, 855
Knoll, F. J.: see Ritchey, W. M.
Kobayashi, H.: see Kitahama, Y.
Koch, P.: see Litt, M. H.
Kodaira, T.: see Wichterle, O.
Kojima, M.: Solution-grown lamellar

crystals of thermally decomposed isotactic polypropylene, 245
Kotake, Y.: see Yoshihara, T.
–, Yoshihara, T., Sato, H., Yamada, N., and Joh, Y.: On the structure of crystalline polymethacrylonitrile, 163
Kottle, S.: see McGaugh, M. C.
Koutsky, J. A., Walton, A. G., and Baer, E.: Epitaxial crystallization of polyoxymethylene, polypropylene, and polypropylene oxide from solution on cleaved surfaces of alkali halides, 177
–, –, and –: Heterogeneous nucleation of polyethylene melts on cleaved surfaces of alkali halides, 185
Kratohvil, J. P.: see Wallace, T. P.
Krimm, S., Tasumi, M., and Opaskar, C. G.: Planarity of the carbon chain in crystalline polyethylene, 105
Krishnamurthy, S.: Increase in critical molecular weight with increasing shear stress, 69
Krozer, S.: A method of evaluating the radius of the equivalent sphere for branched molecules by intrinsic viscosity measurements, 121
Kruse, R. L.: The simplified calculation of average copolymer composition versus extent of polymerization, 437
Kryszewski, M., and Mucha, M.: On the effect of UV irradiation on the glass transition temperature of modified PVC, 1095
Kulkarni, A. Y., and Mehta, P. C.: Oxidation of cellulose by ceric ion, 209
Kunioka, E.: see Tajima, Y.
Kuno, K.: see Yoshino, T.
Kusuki, Y.: see Otsu, T.
Lal, J.: Polymerization of olefin oxides and sulfides with xanthates, dithiocarbamates, and thiocarboxylates of metals, 793
Lando, J. B.: The melting temperature–composition curves of poly(vinylidene fluoride)–poly(vinyl fluoride) mixtures and vinylidene fluoride–vinyl fluoride copolymers, 917
Lawson, D.: see Mackie, P.
Levy, A.: see Bassiri, T. G.
–, and Litt, M.: Polymerization of cyclic imino ethers. II. Oxazines, 881
Lini, D. C.: see Ramey, K. C.
Liquori, A. M., and Pispisa, B.: Stereospecific polymerization of some optically active monomers, 375
Litt, M.: see Bassiri, T. G.
–: see Levy, A.
–, and Koch, P.: Cold flow of glassy polymers. I. Effect of internal stress, 251
–, and Richards, D. H.: A possible method for determining polymerization rate constants in rapid anionic polymerization, 867
Loewrigkeit, P.: see Del Franco, G. J.
Long, R.: see Gesser, H. D.
Lovinger, J. A.: see Baldwin, M. G.
Lowell, P. N., and McCrum, N. G.: The solubility of cyclopropane in single crystal mats of linear polyethylene, 1145
Luongo, J. P.: Infrared spectra of irradiated poly-3-methyl-butene-1 281
MacNulty, B. J.: Crystallization and stress cracking in polymers, 959
McCrum, N. G.: see Lowell, P. N.
McGaugh, M. C., and Kottle, S.: Investigation of copolymers and

blends by thermal volatilization analysis, 719
–, and –: The thermal degradation of poly(acrylic acid), 817
Machi, S.: see Mitsui, H.
Mackie, P., Berger, M. N., Grieveson, B. M., Lawson, D.: Replication in Ziegler polymerization, 493
Maeda, H.: see Hossain, T. M. A.
Makishima, S.: see Ochiai, E.
Mallon, B. J.: Penton used as a dosimeter for 4–15 ke.v. x-rays, 977
Malone, C. P.: see Yau, W. W.
Mancini, C.: see Cernia, E. M.
Mandal, B. M., Nandi, U. S., and Palit, S. R.: A case of possible termination by primary radicals in homogeneous polymerization, 677
Mandelkern, L.: see Gopalan, M. R.
–: see Jackson, J. F.
–, Gopalan, M. R., and Jackson, J. F.: A commentary on polyethylene crystals prepared under high pressures and high temperatures, 1
Matreyek, W.: see Salovey, R.
–: see Winslow, F. H.
Matsumoto, T., and Furukawa, J.: A structural study on π-crotyl nickel halides in relation to their catalyst activity for diene polymerization, 935
Matyska, B.: see Gaylord, N. G.
Mehta, P. C.: see Kulkarni, A. Y.
Meinel, G., and Peterlin, A.: Changes in noncrystalline regions of polyethylene during annealing, 613
–, and –: Fuming nitric acid treatment of polyethylene. III. Investigation of drawn polyethylene, 197
Mendelson, R. A.: On the temperature dependence of the melt viscosity of crystalline polypropylene, 295
Messerle, P. E.: see Rafikov, S. R.
Meyerhoff, G., and Jovanovic, S.: Gel permeation chromatography, calibration, and distributions of cellulose trinitrates, 495
Miki, T., Higashimura, T., Hayashi, K., Okamura, S., and Nishii, M.: Trioxane formation in the solid-state polymerization of tetraoxane, 65
–, –, and Okamura, S.: 1,3,5-Trioxacycloheptane formation in the cationic polymerization of 1,3-dioxolane, 583
Miller, B.: Electrolytic oxidation of poly(2,6-dimethyl-1,4-phenylene) oxide, 11
Miller, R. L.: see Buchanan, D. R.
Misono, A., Uchida, Y., and Yamada, K.: Copolymerization of vinyl chloride with ethylene by the $Ti(O\text{-}n\text{-}Bu)_4$–$AlEtCl_2$–donor catalyst systems, 401
Mitsuda, H.: see Morimoto, K.
Mitsui, H., Suganuma, F., Machi, S., Hagiwara, M., and Kagiya, T.: Polyethylenes formed by the γ-radiation-induced polymerization in various alcohols, 997
Miyairi, T.: see Ochiai, E.
Montagnoli, G.: see Pino, P.
Moretti, G.: see Furlani, A.
Morimoto, K., and Mitsuda, H.: Crystalline polymer of 3,6-dibromo-N-vinylcarbazole, 27
Morita, S.: see Hirooka, M.
Morita, Z.: see Hossain, T. M. A.
Mortimer, G. A.: see O'Driscoll, K. F.
Mucha, M.: see Kryszewski, M.
Munekata, S., and Sobue, H.: The single crystal of cellulose, 1043
Murano, M., and Yamadera, R.: NMR spectra of stereoisomers of

2,4,6-tricyanoheptane as model compounds of polyacrylonitrile, 483
–, and –: The stereoregularity of polyacrylonitrile and its dependence on polymerization temperature, 333
Murphy, R.: see Culbertson, B. M.
Nagata, M.: see Takahashi, T.
Nakaguchi, K.: see Hirooka, M.
Nakamura, A.: see Otsuka, S.
Namikawa, S.: see Higashi, H.
Nandi, U. S.: see Mandal, B. M.
Natarajan, L. V., and Santappa, M.: Photoinitiation of vinyl polymerization by azido pentaamine cobaltic chloride, 357
Natta, G.: see Porri, L.
Needles, H. L.: Riboflavin-sensitized photopolymerizations of acrylic monomers in the presence of proteins or amino acids, 595
Niinomi, M.: see Utsunomiya, H.
Nishii, M.: see Miki, T.
Nishimura, M.: see Otsu, T.
Noguchi, K.: see Iwakura, Y.
Novak, R. C.: see Williamson, R. B.
Ochiai, E., Miyairi, T., Hirai, H., and Makishima, S.: Reactions of butadiene with second transition series metal compounds, 387
O'Connor, R. M.: see Burns, F. W.
O'Driscoll, K. F., Tidwell, P. W., and Mortimer, G. A.: Reactivity in free-radical copolymerization, 575
Ogura, J.: see Yokoo, M.
Ohama, H.: see Kitahama, Y.
Okamura, S.: see Miki, T.
–: see Tazuke, S.
–: see Tsuji, K.
–: see Ueno, K.
–: see Yamoka, H.
Okuda, K., Yoshida, T., Sugita, M., and Asahina, M.: Solution-grown crystals of poly(vinylidene fluoride), 465
Opaskar, C. G.: see Krimm, S.
Osgan, M., and Teyssie, Ph.: Bimetallic μ-oxo-alkoxides as catalysts for the insertion polymerization of epoxides, 789
Ota, K.: see Hatada, K.
Otsu, T., Aoki, S., Nishimura, M., Yamaguchi, M., and Kusuki, Y.: Initiation of vinyl polymerization by systems of activated metals and organic halides having various types of halogen bonds, 835
–, Yamaguchi, M., Takemura, Y., Kusuki, Y., and Aoki, S.: New initiator systems for radical polymerization of vinyl monomers, 697
Otsuka, S., and Nakamura, A.: Rhodium complexes for allene polymerization in polar media, 973
Ozaki, S.: The chemistry of isocyanic acid and its derivatives. III. A new method for preparing saturated and unsaturated aliphatic polyurethanes, 1053
Ozawa, T.: and Kanari, K.: The thermal conductivity of polytetrafluoroethylene, 767
Palit, S. R.: see Mandal, B. M.
Panton, C. J.: The interaction between crystalline paraffins and ethylene–propylene copolymer: A preliminary report, 1047
Parker, C. O.: see Baldwin, M. G.
Partridge, D. B.: see Smith, B. J. K.
Partridge, R. H.: The extrinsic nature of electrical conductivity in polyethylene, 205
Pedersen, H. L.: Fractionation of PVC by solvent extraction, 239
Pellino, E.: see Giannini, U.
Penczek, I., and Penczek, S.: Tetrahydrofuran-3,3-bis(chloro-

methyl)oxetane copolymerization catalyzed by $(i\text{-Bu})_3Al$, 367
Penczek, S.: see Penczek, I.
Pepper, D. C.: see Burns, F. W.
Peterlin, A.: Oscillatory flow birefringence of dilute polymer solutions, 113
–: see Meinel, G.
Pieroni, O.: see Pino, P.
Pierron, E. D.: see Ehrlich, P.
Pino, P., Ciardelli, F., Montagnoli, G., and Pieroni, O.: On the relationship between monomer optical purity and polymer rotatory power in some linear poly-α-olefines, 307
Pispisa, B.: see Liquori, A. M.
Pluhar, M.: see Taylor, L. D.
Porri, L., Di Corato, A., and Natta, G.: Polymerization of 1,3-pentadiene by cobalt catalysts. Influence of the alkyl aluminum compound on the structure of the polymer, 321
–, Gallazzi, M. C., and Vitulli, G.: Polymerization of butadiene, allene, and acetylene by (1,5-cyclooctadiene)-nickel halides, 629
Prince, M., and Bremer, B.: Preparation of hexagonal polyselenomethylene, 843
–, –: Selenium chemistry. IV. Preparation of polydiselenomethylene, 847
Priola, A.: see Trossarelli, L.
Provder, T.: see Ehrlich, P.
Prusinowski, L. R.: see Coll, H.
Rafikov, S. R., Messerle, P. E., Gladyshev, G. P., and Shafranskaya, I. B.: Features of azobisisobutyronitrile decomposition in media with high micro and macro viscosity, 715
Ramey, K. C.: NMR study of poly(methyl methacrylate): Diads and triads, and tetrads and pentads, 859
–, and Lini, D. C.: NMR spectra of poly(vinyl acetate) and poly(vinyl alcohol), 39
Rånby, B.: see Takakura, K.
Reed, P. E.: see Andrews, E. H.
Rembaum, A.: see Hermann, A. M.
–, Hermann, A. M., and Haack, R.: Reactions of N-vinyl carbazole with anionic initiators, 407
Rempp, P.: see Grubisic, Z.
Richards, D. H.: see Litt, M.
Ringsdorf, H.: see Diefenbach, H.
Ritchey, W. M., and Knoll, F. J.: Concerning NMR line ordering and multiplicity owing to tactic structures in polymers (erratum), 887
Rosík, L.: Participation of antioxidants in the initiation of cis-1,4-polyisoprene oxidation, 1083
Ross, F. L.: see Burnett, G. M.
Rothe, M., and Dunkel, W.: Synthesis of monodisperse oligomers of ϵ-aminocaproic acid up to a degree of polymerization of 25 by the Merrifield method, 589
Rubin, J.: Hydrogen bonding in polyamides, 1135
Rubin, L. E.: see Taylor, L. D.
Russo, S., and Munari, S.: Some remarks on ethylene and carbon monoxide copolymerization: Distinction between terminal and penultimate models, 827
Saegusa, T., Taka-ishi, N., and Fujii, H.: Formation of cyclic cooligomers in copolymerization of acetaldehyde with cyclohexylisocyanide, 779
Saini, A.: see Cernia, E. M.
Salovey, R.: see Bair, H. E.
–: see Winslow, F. H.
–, and Hellman, M. Y.: On the fractionation of linear polyethylene, 647

–, –, Matreyek, W., and Winslow, F. H.: Etching of irradiated polyethylene with fuming nitric acid, 1131
Santappa, M.: see Anwaruddin, Q.
–: see Natarajan, L. V.
Sartori, G.: see Valvassori, A.
Sato, H.: see Kotake, Y.
Sato, I.: see Takahashi, T.
Sato, T., Tanaka, T., and Yoshida, T.: The adsorption of poly(dimethyl siloxane) at a liquid–solid interface, 947
Schaefer, J.: see Kern, R. J.
Schaffhauser, R. J.: On the nature of the form II to form I transformation in isotactic polybutene-1, 839
Schmidt, G. F.: see Goddar, H.
Schonhorn, H.: Heterogeneous nucleation of polymer melts on surfaces. I. Influence of substrates on wettability, 919
Schulz, R. C., and Guthmann, A.: Optical rotatory dispersion and circular dichroism of poly-L-lactide. A reply to a letter by M. Goodman and M. D'Alagni, 1099
Šebenda, J.: see Wichterle, O.
Senogles, E.: see Gillman, K. F.
Sera, N.: see Kambara, S.
Shafranskaya, I. B.: see Rafikov, S. R.
Shiga, T.: see Yamoka, H.
Shimamura, K.: see Kambara, S.
Shindo, Y., and Stein, R. S.: On the preparation and dichroism of polyenes, 737
Shinra, K.: see Shono, T.
Shono, T., Hachihama, M., and Shinra, K.: Aromatic poly(phenyleneoxazoles), 1001
Simha, R.: see Utracki, L.
Smith, B. J. K., Dodd, J. A., Instone, A. T., and Partridge, D. B.: The activity of some novel catalysts for the polymerization of trioxan, 625
Smith, R. W., and Wilkes, C. E.: Single crystals of low molecular weight poly(vinyl chloride), 433
Sobue, H.: see Munekata, S.
Soga, K.: Comment on the paper of H. W. Coover, Jr., J. E. Guillet, R. L. Combs, and F. B. Joyner, 347
Stehlíček, J.: see Wichterle, O.
Stein, R. S.: see van Aartsen, J. J.
–: see Adams, G.
–: see Desper, C. R.
–: see Shindo, Y.
–, Kawaguchi, T., Kimura, I., and Takeuchi, A.: The time dependence of crystal orientation of polyethylene, 339
Stille, J. K., and Freeburger, M. E.: Ladder polyquinoxalines from an aliphatic tetraketone, 989
Straus, S.: see Wall, L. A.
Stuart, H. A.: see Frank, W.
Suganuma, F.: see Mitsui, H.
Sugita, M.: see Okuda, K.
Sugiura, T.: see Yamoka, H.
Suzuki, Y.: see Hasegawa, M.
Szőcs, F., and Ulbert, K.: Correlation of ESR spectra of irradiated poly(glycol methacrylate) and poly(methyl methacrylate), 671
Tagami, S.: see Aso, C.
Tajima, Y., and Kunioka, E.: Cyclooligomerization of 1,3-butadiene by nickel π-complexes, 221
Takagi, T.: Epoxidation with peracid type polymer, 1031
Takahashi, A., Takahashi, K., Hirose, T., and Kambara, S.: Organic halides in the high cis-polymerization of butadiene by trialkylaluminum/Co compound, 415
Takahashi, K.: see Takahashi, A.

Takahashi, T., Nagata, M., Hori, Y., and Sato, I.: New information on the ceric-salt-initiated polymerization of acrylamide, 509
Taka-ishi, N.: see Saegusa, T.
Takakura, K., and Rånby, B.: ESR studies of vinyl copolymerization in aqueous solution, 83
Takayanagi, M.: see Utsunomiya, H.
Takemura, Y.: see Otsu, T.
Takeuchi, T.: see Stein, R. S.
Tanaka, T.: see Sato, T.
Taniguchi, M., Kawabata, N., and Furukawa, J.: A novel cyclic structure in polybutadiene, 1025
Tasumi, M.: see Krimm, S.
–, and Zerbi, G.: Frequency distribution of random polymers, 985
Taylor, L. D., Pluhar, M., and Rubin, L. E.: Reaction of sulfonyl isocyanates with polymeric alcohols to produce a polymeric acid, 77
Tazuke, S., Asai, M., Ikeda, S., and Okamura, S.: Photosensitized ionic polymerization, 453
–, and Okamura, S.: The π–π^* transition spectra and polymerizability of vinyl compounds complexed with zinc salts, 95
Teyssie, Ph.: see Durand, J. P.
–: see Osgan, M.
Tidwell, P. W.: see O'Driscoll, K. F.
Toda, F.: see Iwakura, Y.
Togami, S.: see Ishida, Y.
Torii, Y.: see Iwakura, Y.
Toriyama, K.: see Iwasaki, M.
Trent, L. C.: see Hamb, F. L.
Trossarelli, L., Guaita, M., and Priola, A.: Anionic polymerizations initiated by dimsylsodium, 535
–, –, and –: Some remarks on the free-radical polymerization of diene monomers. Allyl methacrylate, N-allylacrylamide, and N-allylmethacrylamide, 129
Tsuji, K., Imanishi, Y., Hayashi, K., and Okamura, S.: Free radicals observed in the vinyl ether–iodine system, 449
–, Yoshida, H., Hayashi, K., and Okamura, S.: ESR study on radiation-induced polymerization of isobutene, 313
Tsuji, W.: see Kitamaru, R.
Tsukamoto, H.: see Ueno, K.
Tucker, J.: see Frazee, J. D.
Turner, D. T.: see Campbell, D.
Tyrrall, E.: see Craig, T. O.
Uchida, Y.: see Misono, A.
Ueno, K., Hayashi, K., and Okamura, S.: Radiation-induced cationic polymerization of isobutene, 569
–, Tsukamoto, H., Hayashi, K., and Okamura, S.: Radiation-induced polymerization of some ring compounds in the liquid state, 395
Ulbert, K.: see Szőcs, F.
Utracki, L., Eliezer, N., and Simha, R.: On the instability of polyacenaphthylene in solution, 137
Utsunomiya, H., Kawasaki, N., Niinomi, M., and Takayanagi, M.: Single crystals of isotactic poly-3-methyl-butene-1, 907
Valvassori, A., and Sartori, G.: Simplified multicomponent copolymerization equations, 345
Vanzo, E.: Lower critical solution temperatures of polybutadiene solutions, 325
Vitulli, G.: see Porri, L.
Wade, R. H.: Reaction of p-xylylene chloride with bases to form polymers, 565
Wall, L. A.: see Flynn, J. H.
–, Fetters, L. J., and Straus, S.:

Polymerization and pyrolysis of poly-1,2-dihydronaphthalene, 721
Wallace, T. P., and Kratohvil, J. P.: Size distribution of polymer latexes from light-scattering measurements, 1139
Walton, A. G.: see Kiss, K.
–: see Koutsky, J. A.
Watabe, K.: see Higashi, H.
Watanabe, H.: see Iwakura, Y.
Watt, I. C.: The retention of water by sheep-skin collagen, 505
Wetton, R. E.: see Fielding-Russell, G. S.
Wichterle, O., Stehlíček, J., Kodaira, T., and Šebenda, J.: Anionic polymerization of adipimide, 931
Wilhelms, R. E.: see Diefenbach, H.
Wilkes, C. E.: see Smith, R. W.
Williamson, R. B., and Novak, R. C.: Fibrous/lamellar microstructure in polyethylene, 147
Wilson, C. W., III: see Kinsinger, J. B.
Winslow, F. H.: see Salovey, R.
–, Hellman, M. Y., Matreyek, W., and Salovey, R.: Etching of solution-crystallized polyethylene with fuming nitric acid, 89
Wood, L. A., and Bekkedahl, N.: Specific heat of natural rubber and other elastomers above the glass transition temperature, 169
Wunderlich, B.: Reply to "a commentary on polyethylene crystals prepared under high pressures and high temperatures," 7
Yabuuchi, H.: see Hirooka, M.
Yamada, K.: see Misono, A.
Yamada, N.: see Kotake, Y.
Yamadera, R.: see Murano, M.
Yamafuji, K.: see Ishida, Y.
Yamaguchi, M.: see Otsu, T.
Yamoka, H., Shiga, T., Hayashi, K., Okamura, S., and Sugiura, T.: Mass-spectrometric study in the radiation-induced polymerization of nitroethylene, 329
Yau, W. W., and Malone, C. P.: An approach to diffusion theory of gel permeation chromatographic separation, 663
Yokoo, M., Ogura, J., and Kanzawa, T.: Tetraalkyldistannoxanes as catalysts for urethane formation, 57
Yoshida, H.: see Tsuji, K.
Yoshida, T.: see Okuda, K.
–: see Sato, T.
Yoshihara, T.: see Kotake, Y.
–, Kotake, Y., and Joh, Y.: Structural studies on isotactic polymethacrylonitrile, 459
Yoshino, T., Kenjo, H., and Kuno, K.: Assignment of the methylene proton signals and estimation of the meso to racemic methylene ratios in polyacrylonitriles, 703
Yuguchi, S.: see Iwamoto, M.
Yuki, H.: see Hatada, K.
Zerbi, G.: see Tasumi, M.

SUBJECT INDEX, VOLUME 5

Absorption, dielectric low-temperature, in stereoblock poly(methyl methacrylate) 745
Acetaldehyde, copolymerization of, with cyclohexyl isocyanide, formation of cyclic co-oligomers in, 779
Acetals, sulfonamido, of poly(vinyl alcohol), alkali-stable thermoreversible gels derived from, 73
Acetylene, and azido groups, compounds containing, 1,3-dipolar cycloaddition polymerization of, 803
butadiene, and allene, polymerization of, by (1,5-cyclooctadiene)-nickel halides, 629
Acetylenic hydrocarbons, aromatization reactions of, 523
Acids, dicarboxylic, polyaddition reactions of N,N′-bis-1,2-alkylenamides with, 487
polymeric, reaction of sulfonyl isocyanates with polymeric alcohols to produce, 77
Acrylamide, ceric-salt-initiated polymerization of, 509
Acrylates and methacrylates, reactivities of, 799
Acrylic monomers, riboflavin-sensitized photopolymerizations of, in the presence of proteins or amino acids, 595
Acrylonitrile and olefins, novel equimolar copolymers of, 47
Activated metals and organic halides, systems of, having various types of halogen bonds, initiation of vinyl polymerization by, 835
Active site concentrations estimated using low-conversion and high-conversion kinetic data, discrepancy in, 1037
Adhesion of "low energy" solids, 469
Adipimide, anionic polymerization of, 931
Adsorption of poly(dimethyl siloxane) at a liquid–solid interface, 947
Air, influence of, 471
Alcohols, polyethylenes formed by γ-radiation-induced polymerization in, 997
polymeric, reaction of sulfonyl isocyanates with, to produce a polymeric acid, 77
$AlEt_2OCH_2CH_2NRR'-TiCl_3$ system, polymerization of α-olefins with, 681
Aliphatic polyurethanes, saturated and unsaturated, 1053
Aliphatic tetraketone, ladder polyquinoxalines from, 989
Alkali halides, cleaved surfaces of, heterogeneous nucleation of polyethylene melts on, 185
Alkali-stable thermoreversible gels derived from sulfonamido acetals of poly(vinyl alcohol), 73
Alkylaluminum compound, influence of, on the structure of the polymer, 321
Allene, butadiene, and acetylene, polymerization of, by (1,5-cyclooctadiene)-nickel halides, 629
Allene polymerization in polar media, rhodium complexes for, 973

N-Allylacrylamide, allyl methacrylate, and N-allylmethacrylamide, 129
N-Allylmethacrylamide, N-allacrylamide, and allyl methacrylate, 129
Allyl methacrylate, N-allacrylamide, and N-allylmethacrylamide, 129
Alternate copolymerization of 4-methyl-1,3-dioxene-4 with maleic anhydride, molecular orbital considerations on, 1103
Aluminum–vanadium oxytrichloride compound system, polymerization of vinyl chloride with, 1125
Amino acids, or proteins, riboflavin-sensitized photopolymerizations of acrylic monomers in the presence of, 595
ϵ-Aminocaproic acid, synthesis of monodisperse oligomers of, up to a degree of polymerization of 25 by the Merrifield method, 589
Amorphous polycarbonate, electron microscopic investigations on, 711
Anionic initiators, reactions of N-vinyl carbazole with, 407
Anionic polymerization, of adipimide, 931
initiated by dimsylsodium, 535
rapid, polymerization rate constants in, a possible method for determining, 867
Annealing, changes in noncrystalline regions of polyethylene during, 613
Anthraquinone sulfonates as photoinitiators of vinyl polymerization, 361
Antioxidant, elastomer, carbon black as, 1109
participation of, in initiation of cis-1,4-polyisoprene oxidation, 1083
Aqueous solution, ESR studies of vinyl copolymerization in, 83
Aromatic poly(amide-hydrazides) and poly(amide-1,3,4-oxadiazoles), 807
Aromatic poly(amide-1,3,4-oxadiazoles) and aromatic poly(amide-hydrazides), 807
Aromatic poly(phenyleneoxazoles), 1001
Aromatization reactions of acetylenic hydrocarbons, 523
Association in two-dimensionally crosslinked poly(methyl methacrylate), 691
Asymmetric-selection polymerization of propylene sulfide, 1073
Average copolymer composition, simplified calculation of, versus extent of polymerization, 437
Azido and acetylene groups, compounds containing, 1,3-dipolar cycloaddition polymerization of, 803
Azido pentaamine cobaltic chloride, photoinitiation of vinyl polymerization by, 357
Azobisisobutyronitrile decomposition, features of, in media with high micro and macro viscosity, 715
Bimetallic μ-oxo-alkoxides as catalysts for the insertion polymerization of epoxides, 789
N,N′-Bis-1,2-alkylenamides, polyaddition reactions of, with dicarboxylic acids, 487
Biscarbodiimides, polyaddition reaction of, with diamines, synthesis of polyguanidines by, 821
Blends and copolymers, investigation of, by thermal volatilization analysis, 719
Branched copolymers of polyethylene, methyl and ethyl, crystallization of, from dilute solution, 605

Branching in poly(methyl methacrylate) obtained by γ-ray irradiation, 687
$(i\text{-Bu})_3Al$, tetrahydrofuran-3,3-bis(chloromethyl)oxetane copolymerization catalyzed by, 367
Butadiene, allene, and acetylene, polymerization of, by (1,5-cyclooctadiene)-nickel halides, 629
high cis-polymerization of, by trialkylaluminum/Co compound, organic halides in, 415
and isoprene, catalyst for vinyl type polymerization of, 1007
1,4-polymerization of, factors controlling the cis/trans orientation in, 785
reactions of, with second transition series metal compounds, 387
1,3-Butadiene, cyclooligomerization of, by nickel π-complexes, 221
Butyl rubber, configuration of isoprene structure in, by time-averaging high resolution nuclear magnetic resonance, 501
Calibration, universal, for gel permeation chromatography, 753
ε-Caprolactam, polymerization of, 577
Carbanion to ketone, α-methylstyrene tetramer with electron transfer from, 1013
Carbon black, effect of γ-irradiation in polytetrafluoroethylene filled with, 635
as an elastomer antioxidant, 1109
Carbon monoxide and ethylene copolymerization, 827
Catalyst activity for diene polymerization, structural study on π-crotyl nickel halides in relation to, 935
Catalysts, bimetallic μ-oxo-alkoxides as, for the insertion polymerization of epoxides, 789
cobalt, polymerization of 1,3-pentadiene by, 321
novel, activity of some, for the polymerization of trioxan, 625
tetraalkyldistannoxanes as, for urethane formation, 57
for vinyl type polymerization of butadiene and isoprene, 1007
Ziegler-Natta, stereospecific polymerization of monomers containing nitrogen and oxygen with, 527
Cationic dye, diffusion of, into polyacrylonitrile, 1069
Cationic polymerization, of 1,3-dioxolane, 1,3,5-trioxacycloheptane formation in, 583
radiation-induced, of isobutene, 569
Cellulose, oxidation of, by ceric ion, 209
single crystal of, 1043
Cellulose trinitrates, gel permeation chromatography, calibration, and distributions of, 495
Ceric ion, oxidation of cellulose by, 209
Ceric-salt-initiated polymerization of acrylamide, 509
Chains, flexible polymer, equilibrium distribution of, between a macroscopic solution phase and small voids, 773
Chloride, vinyl, copolymerization of, with ethylene by the $Ti(O\text{-}n\text{-}Bu)_4$–$AlEtCl_2$–donor catalyst systems, 401
p-xylene, reaction of, with bases to form polymers, 565
Chloro–iron(III) complexes in N,N-dimethylformamide/styrene systems, 1119
Circular dichroism and optical rotatory dispersion of poly-L-lactide, 1099
Cleaved surfaces of alkali halides,

heterogeneous nucleation of polyethylene melts on, 185
Cobalt catalysts, polymerization of 1,3-pentadiene by, 321
Cobaltic chloride, azido pentaamine, photoinitiation of vinyl polymerization by, 357
Cold flow of glassy polymers, 251
Collagen, sheep-skin, retention of water by, 505
Complex copolymerization, 47
Complexes, iron(III)–chloro, in N,N-dimethylformamide/styrene systems, 1119
rhodium, for allene polymerization in polar media, 973
π-Complexes, nickel, cyclooligomerization of 1,3-butadiene by, 221
Conductivity, electrical, 79
electrical, in polyethylene, extrinsic nature of, 205
thermal, of polytetrafluoroethylene, 767
Conversion data and thermogravimetric rate, initial kinetic parameters from, 191
Co-oligomers, cyclic, formation of, in copolymerization of acetaldehyde with cyclohexyl isocyanide, 779
Critical molecular weight, increase in, with increasing shear stress, 69
Critical solution temperatures, lower, of polybutadiene solutions, 325
Crosslinked glasslike polymers, proliferous growth in, 993
Crosslinked polyethylene, crystalline structure of, crystallized in the stretched state, 257
π-Crotyl nickel halides, structural study on, in relation to their catalyst activity for diene polymerization, 935
Crystalline paraffins and ethylene–propylene copolymer, interaction between, 1047
Crystalline polychlorotrifluoroethylene copolymer films, orientational changes in, 541
Crystalline polymer of 3,6-dibromo-N-vinylcarbazole, 27
Crystalline polymethacrylonitrile, structure of, 163
Crystalline polypropylene, temperature dependence of the melt viscosity of, 295
Crystalline poly(vinyl bromide), 271
Crystalline structure of a slightly crosslinked polyethylene crystallized in the stretched state, 257
Crystallinity, degree of, of linear polyethylene from wide-angle x-ray diffraction, 925
structure, and paramagnetism of polyphenylacetylene, 911
Crystallization, epitaxial, of polyoxymethylene, polypropylene, and polypropylene oxide from solution on cleaved surfaces of alkali halides, 177
of ethyl and methyl branched copolymers of polyethylene from dilute solution, 605
isothermal, from dilute solution, dimensional properties of polyethylene crystals formed during, 557
polymer, new information on, 761
and stress cracking in polymers, 959
Crystal orientation of polyethylene, time dependence of, 339
Crystals, lamellar, solution-grown, of thermally decomposed isotactic polypropylene, 245
polyethylene, dimensional properties of, formed during isothermal

crystallization from dilute solution, 557
polyethylene, prepared under high pressures and high temperatures, 1
polyethylene single, surface structure of, 619
solution-grown, of poly(vinylidene fluoride), 465
Cyclic co-oligomers, formation of, in copolymerization of acetaldehyde with cyclohexyl isocyanide, 779
Cyclic imino ethers, polymerization of, 871, 881
Cyclic structure in polybutadiene, 1025
Cyclic tris(ethylene terephthalate), 1057
Cycloaddition polymerization, 1,3-dipolar, of compounds containing both azido and acetylene groups, 803
Cyclohexyl isocyanide, copolymerization of acetaldehyde with, formation of cyclic co-oligomers in, 779
(1,5-Cyclooctadiene)-nickel halides, polymerization of butadiene, allene, and acetylene by, 629
Cyclooligomerization of 1,3-butadiene by nickel π-complexes, 221
Cyclopolymerization of o-phthalaldehyde, 217
Cyclopropane, solubility of, in single crystal mats of linear polyethylene, 1145
Decomposition, azobisisobutyronitrile, features of, in media with high micro and macro viscosity, 715
Deformed ringed spherulites, scattering of light by, 901
Degradation, thermal, of poly(acrylic acid), 817
thermal, of polystyrene, 855
Degree of crystallinity of linear polyethylene from wide-angle x-ray diffraction, 925
Diads and triads, 859
Diamines, polyaddition reaction of biscarbodiimides with, synthesis of polyguanidines by, 821
3,6-Dibromo-N-vinylcarbazole, crystalline polymer of, 27
Dicarboxylic acids, polyaddition reactions of N,N′-bis-1,2-alkylenamides with, 487
2,3-Dichloro-1,3-butadiene, polymerization of, 131
Dichroism, circular, and optical rotatory dispersion of poly-L-lactide, 1099
and preparation of polyenes, 737
Dielectric low-temperature absorption in stereoblock poly(methyl methacrylate), 745
Dielectric permittivity of poly(tetramethylene oxide), 761
Diene monomers, free-radical polymerization of, 129
Diene polymerization, structural study on π-crotyl nickel halides in relation to catalyst activity for, 935
Diffraction, wide-angle x-ray, degree of crystallinity of linear polyethylene from, 925
Diffusion of cationic dye into polyacrylonitrile, 1069
Diffusion theory, an approach to, of gel permeation chromatographic separation, 663
Dilute solution, crystallization of ethyl and methyl branched copolymers of polyethylene from, 605
dimensional properties of polyethylene crystals formed during isothermal crystallization

from, 557
Dimensional properties of polyethylene crystals formed during isothermal crystallization from dilute solution, 557
2,5-Dimethyl-3,4-dihydro-2H-pyran-2-carboxyaldehyde (methacrolein dimer), 1019
N,N-Dimethylformamide/styrene systems, iron(III)–chloro complexes in, 1119
Dimsylsodium, anionic polymerizations initiated by, 535
1,3-Dioxolane, cationic polymerization of, 1,3,5-trioxacycloheptane formation in, 583
1,3-Dipolar cycloaddition polymerization of compounds containing both azido and acetylene groups, 803
Dissociation, of triethylaluminum, 79
Distribution, equilibrium, of flexible polymer chains between a macroscopic solution phase and small voids, 773
Dithiocarbamates, xanthates, and thiocarboxylates of metals, polymerization of olefin oxides and sulfides with, 793
Dosimeter for 4–15 ke.v. x-rays, penton as, 977
Drawn polyethylene, 197
Dye, cationic, diffusion of, into polyacrylonitrile, 1069
Dynamic properties, rubber, determination of, using a sinusoidal vibrator and weighted specimen, 653
Elastomer antioxidant, carbon black as, 1109
Elastomers, specific heat of natural rubber and other, above the glass transition temperature, 169
Electrical conductivity, 79
in polyethylene, extrinsic nature of, 205
Electric field polymerization of liquid vinyl monomers, 969
Electric properties and syntheses of poly(α-ethinyl naphthalene), 233
Electrolytic oxidation of poly(2,6-dimethyl-1,4 phenylene)oxide, 11
Electron microscopic investigations on amorphous polycarbonate, 711
Electron spin resonance of trapped free radicals and the photoinduced radical conversion in γ-irradiated isotactic polypropylene, 423
Electron transfer from carbanion to ketone, α-methylstyrene tetramer with, 1013
Epitaxial crystallization of polyoxymethylene, polypropylene, and polypropylene oxide from solution on cleaved surfaces of alkali halides, 177
Epitaxy of polyoxymethylene, molecular structure in, 1087
2,3-Epithiopropyl and 2,3-epoxy methacrylates, stereospecific polymerizations of, 29
Epoxidation with peracid type polymer, 1031
Epoxides, insertion polymerization of, bimetallic μ-oxo-alkoxides as bimetallic catalysts for, 789
2,3-Epoxy and 2,3-epithiopropyl methacrylates, stereospecific polymerizations of, 29
Equilibrium distribution of flexible polymer chains between a macroscopic solution phase and small voids, 773
Equimolar copolymers, novel, of acrylonitrile and olefins, 47

ESR spectra of irradiated poly(glycol methacrylate) and poly(methyl methacrylate), correlation of, 671
ESR study, on radiation-induced polymerization of isobutene, 313
of vinyl copolymerization in aqueous solution, 83
Etching, of irradiated polyethylene with fuming nitric acid, 1131
of solution-crystallized polyethylene with fuming nitric acid, 89
Ethers, cyclic imino, polymerization of, 871, 881
Ethylene, and carbon monoxide copolymerization, 827
copolymerization of vinyl chloride with, by the $Ti(O\text{-}n\text{-}Bu)_4$–$AlEtCl_2$–donor catalyst systems, 401
Ethylene–propylene copolymer and crystalline paraffins, interaction between, 1047
Ethyl and methyl branched copolymers of polyethylene, crystallization of, from dilute solution, 605
Evaluation du degré d'hydrolyse du polyméthacrylate de méthyle par la méthode bidimensionnelle, 153
Evolution, hydrogen, from natural rubber during tensile tests, 317
Extraction, solvent, fractionation of PVC by, 239
Fibers and films, randomization of orientation of, 893
Fibrous/lamellar microstructure in polyethylene, 147
Films, copolymer, crystalline polychlorotrifluorethylene, orientational changes in, 541
Films and fibers, randomization of orientation of, 893
Flexible polymer chains, equilibrium distribution of, between a macroscopic solution phase and small voids, 773
Flow, non-Newtonian, correlation with an average molecular weight, 1063
Form II to form I transformation in isotactic polybutene-1, 839
Form III of polybutene-1 single crystals, melting behavior of, 429
Four-center type photopolymerization in the solid state, 813
Fractionation, of linear polyethylene, 647
of PVC by solvent extraction, 239
Free-radical copolymerization, reactivity in, 575
Free-radical organoboron complex in the polymerization of methyl methacrylate, 157
Free-radical polymerization of diene monomers, 129
Free radicals, observed in the vinyl ether–iodine system, 449
trapped, electron spin resonance of, and the photoinduced radical conversion in γ-irradiated isotactic polypropylene, 423
Frequency distributions of random polymers, 985
Fuming nitric acid, etching of irradiated polyethylene with, 1131
etching of solution-crystallized polyethylene with, 89
treatment of polyethylene with, 197
Gel permeation chromatographic separation, diffusion theory of, an approach to, 663
Gel permeation chromatography, 1153
calibration, and distributions of cellulose trinitrates, 495
universal calibration for, 753
Gels, alkali-stable thermorevers-

ible, derived from sulfonamido acetals of poly(vinyl alcohol), 73
Glasslike polymers, crosslinked proliferous growth in, 993
Glass transition temperature, of modified PVC, effect of UV irradiation on, 1095
specific heat of natural rubber and other elastomers above, 169
Glassy polymers, cold flow of, 251
Graft copolymers, of rubbers and polystyrene prepared with "living" polymers, 641
with short side chains, 477
Halides, alkali, cleaved surfaces of, heterogeneous nucleation of polyethylene melts on, 185
organic, and activated metals, systems of, having various types of halogen bonds, initiation of vinyl polymerization by, 835
organic, in the high cis-polymerization of butadiene by trialkylaluminum/Co compound, 415
Halogen bonds, systems of activated metals and organic halides having various types of, initiation of vinyl polymerization by, 835
Heteroaromatic polymers via salt intermediates, 941
Heterogeneous nucleation, of polyethylene melts on cleaved surfaces of alkali halides, 185
of polymer melts on surfaces, 919
Hexagonal polyselenomethylene, preparation of, 843
High speed membrane osmometry, application of, to unfractionated vinylpyrrolidone–vinyl acetate copolymers, 851
Homogeneous polymerization, possible termination by primary radicals in, 677
α-Hydrogen, lability of, in polyacrylonitrile, 23
Hydrogen bonding in polyamides, 1135
Hydrogen evolution from natural rubber during tensile tests, 317
Hydrolyse du polyméthacrylate de méthyle par la méthode bidimensionnelle, évaluation du degré de, 153
Imino ethers, cyclic, polymerization of, 871, 881
Infrared spectra, of irradiated poly-3-methyl-butene-1, 281
and tacticity of poly(vinyl acetate), 551
Initiation of vinyl polymerization by systems of activated metals and organic halides having various types of halogen bonds, 835
Initiation by water, 577
Initiators, anionic, reactions of N-vinyl carbazole with, 407
Initiator systems, new, for radical polymerization of vinyl monomers, 697
Insertion polymerization of epoxides, bimetallic μ-oxo-alkoxides as bimetallic catalysts for, 789
Instability of polyacenaphthylene in solution, 137
Internal stress, effect of, 251
Ionic polymerization, photosensitized, 453
radiation-induced, of styrene, 1059
Iron(III)–chloro complexes in N,N-dimethylformamide/styrene systems, 1119
γ-Irradiated isotactic polypropylene, photoinduced radical conversion in, electron spin resonance of trapped free radicals and, 423
Irradiated polyethylene, etching of, with fuming nitric acid, 1131

Irradiated poly(glycol methacrylate) and poly(methyl methacrylate), ESR spectra of, correlation of, 671
Irradiated poly-3-methyl-butene-1, infrared spectra of, 281
γ-Irradiation, branching in poly(methyl methacrylate) obtained by, 687
effects of, in polytetrafluoroethylene filled with carbon black, 635
Isobutene, radiation-induced cationic polymerization of, 569
radiation-induced polymerization of, ESR study on, 313
Isocyanates, sulfonyl, reaction of, with polymeric alcohols to produce a polymeric acid, 77
Isocyanic acid and its derivatives, 1053
Isocyanide, cyclohexyl, copolymerization of acetaldehyde with, formation of cyclic co-oligomers in, 779
Isoprene and butadiene, catalyst for vinyl type polymerization of, 1007
Isoprene structure, configuration of, in butyl rubber by time-averaging high resolution nuclear magnetic resonance, 501
Isotactic polybutene-1, form II to form I transformation in, 839
Isotactic polymethacrylonitrile, structural studies on, 459
Isotactic poly-3-methyl-butene-1, single crystals of, 907
Isotactic polypropylene, γ-irradiated, photoinduced radical conversion in, electron spin resonance of trapped free radicals and, 423
thermally decomposed, solution-grown lamellar crystals of, 245
Isothermal crystallization from dilute solution, dimensional properties of polyethylene crystals formed during, 557
Ketone, carbanion to, α-methylstyrene tetramer with electron transfer from, 1013
Kinetic data, low-conversion and high-conversion, active site concentrations estimated using, discrepancy in, 1037
Kinetic parameters, initial, from thermogravimetric rate and conversion data, 191
Lability of the α-hydrogen in polyacrylonitrile, 23
Ladder polyquinoxalines from aliphatic tetraketone, 989
Lamellar crystals, solution-grown, of thermally decomposed isotactic polypropylene, 245
Latexes, polymer, size distribution of, from light-scattering measurements, 1139
Light, scattering of, by deformed ringed spherulites, 901
Light-scattering measurements, size distribution of polymer latexes from, 1139
Linear polyethylene, degree of crystallinity of, from wide-angle x-ray diffraction, 925
fractionation of, 647
solubility of cyclopropane in single crystal mats of, 1145
Linear poly-α-olefines, relationship between monomer optical purity and polymer rotatory power in some, 307
Liquid–solid interface, adsorption of poly(dimethyl siloxane) at, 947
"Living" polymers, graft copolymers of rubbers and polystyrene prepared with, 641
"Low energy" solids, adhesion of, 469
Low molecular weight poly(vinyl

chloride), single crystals of, 433
Low-temperature absorption, dielectric, in stereoblock poly(methyl methacrylate), 745
Macroscopic solution phase and small voids, equilibrium distribution of flexible polymer chains between, 773
Maleic anhydride with 4-methyl-1,3-dioxene-4 molecular orbital considerations on alternate copolymerization of, 1103
Mass-spectrometric study in the radiation-induced polymerization of nitroethylene, 329
Mats, single crystal, of linear polyethylene, solubility of cyclopropane in, 1145
Media with high micro and macro viscosity, features of azobisisobutyronitrile decomposition in, 715
Melting behavior of the form III of polybutene-1 single crystals, 429
Melting of polyethylene prepared from stirred xylene solutions, 265
Melting temperature–composition of poly(vinylidene fluoride)–poly(vinyl fluoride) mixtures and vinylidene fluoride–vinyl fluoride copolymers, 917
Melts, polyethylene, heterogeneous nucleation of, on cleaved surfaces of alkali halides, 185
polymer, on surfaces, heterogeneous nucleation of, 919
Melt viscosity of crystalline polypropylene, temperature dependence of, 295
Membrane osmometry, high speed, application of, to unfractionated vinylpyrrolidone–vinyl acetate copolymers, 851
Merrifield method, synthesis of monodisperse oligomers of ϵ-aminocaproic acid up to a degree of polymerization of 25 by, 589
Metal compounds, second transition series, reactions of butadiene with, 387
Metals, activated, and organic halides, systems of, having various types of halogen bonds, initiation of vinyl polymerization by, 835
xanthates, dithiocarbamates, and thiocarboxylates of, polymerization of olefin oxides and sulfides with, 793
Methacrylates, and acrylates, reactivities of, 799
2,3-epoxy and 2,3-epithiopropyl, stereospecific polymerizations of, 29
Methyl atropate, polymeric peroxide of, 955
4-Methyl-1,3-dioxene-4 with maleic anhydride, molecular orbital considerations on alternate copolymerization of, 1103
Methylene proton signals, assignment of, and estimation of the meso to racemic methylene ratios in polyacrylonitriles, 703
Methyl and ethyl branched copolymers of polyethylene, crystallization of, from dilute solution, 605
Methyl methacrylate, polymerization of, free-radical organoboron complex in, 157
α-Methylstyrene, rate constant for propagation of polymerization of, by free anion in tetrahydrofuran and tetrahydropyran, 965
α-Methylstyrene tetramer with electron transfer from carbanion to ketone, 1013
Microstructure, in copolymers, 285

fibrous/lamellar, in polyethylene, 147
Molecular orbital considerations on alternate copolymerization of 4-methyl-1,3-dioxene-4 with maleic anhydride, 1103
Molecular structure in epitaxy of polyoxymethylene, 1087
Molecular weight, average, correlation of non-Newtonian flow with, 1063
critical, increase in, with increasing shear stress, 69
Monodisperse oligomers, synthesis of, of ϵ-aminocaproic acid up to a degree of polymerization of 25 by the Merrifield method, 589
Monomer optical purity and polymer rotatory power in some linear poly-α-olefines, relationship between, 307
Monomer units, tetrads of, in poly(methyl methacrylate), NMR signals of, 225
Multicomponent copolymerization equations, simplified, 345
Natural rubber, hydrogen evolution from, during tensile tests, 317
and other elastomers, specific heat of, above the glass transition temperature, 169
structure of, 601
Nickel π-complexes, cyclooligomerization of 1,3-butadiene by, 221
Nickel halides, π-crotyl, structural study on, in relation to their catalyst activity for diene polymerization, 935
Nitric acid, fuming, etching of irradiated polyethylene with, 1131
fuming, etching of solution-crystallized polyethylene with, 89
Nitroethylene, radiation-induced polymerization of, mass-spectrometric study in, 329
NMR signals of tetrads of monomer units in poly(methyl methacrylate), 225
NMR spectra, of poly(vinyl acetate) and poly(vinyl alcohol), 39
of stereoisomers of 2,4,6-tricyanoheptane as model compounds of polyacrylonitrile, 483
NMR spectroscopy, analysis of tetrad sequences in vinylidene chloride–isobutylene copolymers by, 285
NMR study of poly(methyl methacrylate), 859
Noncrystalline regions of polyethylene, changes in, during annealing, 613
Non-Newtonian flow, correlation with an average molecular weight, 1063
Nuclear magnetic resonance, high resolution, configuration of isoprene structure in butyl rubber by time-averaging, 501
Nucleation, heterogeneous, of polyethylene melts on cleaved surfaces of alkali halides, 185
heterogeneous, of polymer melts on surfaces, 919
Olefin oxides and sulfides, polymerization of, with xanthates, dithiocarbamates, and thiocarboxylates of metals, 793
Olefins and acrylonitrile, novel equimolar copolymers of, 47
α-Olefins, polymerization of, with $AlEt_2OCH_2CH_2NRR'-TiCl_3$ system, 681
Olefin sulfides and olefin oxides, polymerization of, with xanthates, dithiocarbamates, and thiocarboxylates of metals, 793
Oligomers, monodisperse, synthesis of, of ϵ-aminocaproic acid

up to a degree of polymerization of 25 by the Merrifield method, 589
Optically active monomers, stereospecific polymerization of, 375
Optical purity, monomer, and polymer rotatory power in some linear poly-α-olefines, relationship between, 307
Optical rotatory dispersion and circular dichroism of poly-L-lactide, 1099
Organic halides, and activated metals, systems of, having various types of halogen bonds, initiation of vinyl polymerization by, 835
in the high cis-polymerization of butadiene by trialkylaluminum/Co compound, 415
Organoboron complex, free-radical, in the polymerization of methyl methacrylate, 157
Orientation, crystal, of polyethylene, time dependence of, 339
in crystalline polychlorotrifluoroethylene copolymer films, 541
of films and fibers, randomization of, 893
Osmometry, high speed membrane, application of, to unfractionated vinylpyrrolidone–vinyl acetate copolymers, 851
Oxazines, 881
Oxazolines, 871
5-Oxazolines, novel synthesis of polyamideamines from, 17
Oxidation, of cellulose by ceric ion, 209
electrolytic, of poly(2,6-dimethyl-1,4 phenylene)oxide, 11
cis-1,4-polyisoprene, participation of antioxidants in initiation of, 1083
Oxides, olefin, and olefin sulfides, polymerization of, with xanthates, dithiocarbamates, and thiocarboxylates of metals, 793
μ-Oxo-alkoxides, bimetallic, as catalysts for the insertion polymerization of epoxides, 789
Paraffins, crystalline, and ethylene–propylene copolymer, interaction between, 1047
Paramagnetism, crystallinity, and structure of polyphenylacetylene, 911
Pentaamine cobaltic chloride, azido, photoinitiation of vinyl polymerization by, 357
1,3-Pentadiene, polymerization of, by cobalt catalysts, 321
Pentads and tetrads, 859
Penton used as a dosimeter for 4–15 ke.v. x-rays, 977
Penultimate and terminal models, distinction between, 827
Peracid type polymer, epoxidation with, 1031
Permittivity, dielectric, of poly(tetramethylene oxide), 761
Peroxide, polymeric, of methyl atropate, 955
Phenols, phenoxy, thermal polymerization of, 277
Phenoxy phenols, thermal polymerization of, 277
Photoinduced radical conversion in γ-irradiated isotactic polypropylene, electron spin resonance of trapped free radicals and, 423
Photoinitiation of vinyl polymerization by azido pentaamine cobaltic chloride, 357
Photoinitiators of vinyl polymerization, anthraquinone sulfonates as, 361
Photopolymerization, four-center type, in the solid state, 813
riboflavin-sensitized, of acrylic

monomers in the presence of proteins or amino acids, 595
Photosensitized ionic polymerization, 453
Photovoltaic effect in poly-N-vinylcarbazole–iodine charge transfer complex, 445
o-Phthalaldehyde, cyclopolymerization of, 217
Polar media, rhodium complexes for allene polymerization in, 973
Polyacenaphthylene, instability of, in solution, 137
Poly(acrylic acid), thermal degradation of, 817
Polyacrylonitrile, and its dependence on polymerization temperature, stereoregularity of, 333
diffusion of cationic dye into, 1069
lability of the α-hydrogen in, 23
model compounds of, stereoisomers of 2,4,6-tricyanoheptane as, NMR spectra of, 485
Polyaddition reactions, of N,N′-bis-1,2-alkylenamides with dicarboxylic acids, 487
of biscarbodiimides with diamines, synthesis of polyguanidines by, 821
Polyamideamines, novel synthesis of, from 5-oxazolones, 17
Poly(amide-hydrazides), aromatic, and aromatic poly(amide-1,3,4-oxadiazoles), 807
Poly(amide-1,3,4-oxadiazoles), aromatic, and aromatic poly-(amide-hydrazides), 807
Polyamides, hydrogen bonding in, 1135
Polybutadiene, cyclic structure in, 1025
Polybutadiene solutions, lower critical solution temperatures of, 325
Polybutene-1, isotactic, form II to form I transformation in, 839
single crystals of, form III, melting behavior of, 429
Polycarbonate, amorphous, electron microscopic investigations on, 711
Polychlorotrifluoroethylene copolymer films, crystalline, orientational changes in, 541
Poly-1,2-dihydronaphthalene, polymerization and pyrolysis of, 721
Poly(2,6-dimethyl-1,4 phenylene)-oxide, electrolytic oxidation of, 11
Poly(dimethyl siloxane), adsorption of, at a liquid–solid interface, 947
Polydiselenomethylene, preparation of, 847
Poly-2,5-distyrylpyrazine, 813
Polyenes, preparation and dichroism of, 737
Poly(α-ethinyl naphthalene), syntheses and electric properties of, 233
Polyethylene, drawn, 197
electrical conductivity in, extrinsic nature of, 205
ethyl and methyl branched copolymers of, crystallization of, from dilute solution, 605
fibrous/lamellar microstructure in, 147
fuming nitric acid treatment of, 197
irradiated, etching of, with fuming nitric acid, 1131
linear, degree of crystallinity of, from wide-angle x-ray diffraction, 925
linear, fractionation of, 647
solubility of cyclopropane in

single crystal mats of, 1145
melting of, prepared from stirred xylene solutions, 265
noncrystalline regions of, changes in, during annealing, 613
slightly crosslinked, crystalline structure of, crystallized in the stretched state, 257
solution-crystallized, etching of, with fuming nitric acid, 89
time dependence of crystal orientation of, 339
Polyethylene crystals, dimensional properties of, formed during isothermal crystallization from dilute solution, 557
prepared under high pressures and high temperatures, 1
Polyethylene melts, heterogeneous nucleation of, on cleaved surfaces of alkali halides, 185
Polyethylenes formed by γ-radiation-induced polymerization in alcohols, 997
Polyethylene single crystals, surface structure of, 619
Poly(ethylene terephthalate), radiolysis of, 471
Poly(glycol methacrylate), irradiated, and poly(methyl methacrylate), irradiated, ESR spectra of, correlation of, 671
Polyguanidines, synthesis of, by polyaddition reaction of biscarbodiimides with diamines, 821
cis-1,4-Polyisoprene oxidation, participation of antioxidants in initiation of, 1083
Poly-S-lactic acid structure in solution, 515
Poly-L-lactide, optical rotatory dispersion and circular dichroism of, 1099
Polymethacrylonitrile, crystalline, structure of, 163
isotactic structural studies on, 459
Poly-3-methyl-butene-1, irradiated, infrared spectra of, 281
isotactic, single crystals of, 907
Poly(methyl methacrylate), branching in, obtained by γ-ray irradiation, 687
irradiated, and poly(glycol methacrylate), irradiated, ESR spectra of, correlation of, 671
NMR study of, 859
stereoblock, dielectric low-temperature absorption in, 745
tetrads of monomer units in, NMR signals of, 225
Poly-α-olefines, relationship between monomer optical purity and polymer rotatory power in some, 307
Polyoxymethylene, epitaxy of, molecular structure in, 1087
polypropylene, and polypropylene oxide, epitaxial crystallization of, from solution on cleaved surfaces of alkali halides, 177
Polyphenylacetylene, structure, crystallinity, and paramagnetism of, 911
Poly(phenyleneoxazoles), aromatic, 1001
Polypropylene, crystalline, temperature dependence of the melt viscosity of, 295
γ-irradiated isotactic, photoinduced radical conversion in, electron spin resonance of trapped free radicals and, 423
isotactic, thermally decomposed, solution-grown lamellar crystals of, 245
polyoxymethylene, and polypropylene oxide, epitaxial crystallization of, from solution on cleaved

surfaces of alkali halides, 177
Polypropylene oxide, polypropylene, and polyoxymethylene, epitaxial crystallization of, from solution on cleaved surfaces of alkali halides, 177
Polyquinoxalines, ladder, from aliphatic tetraketone, 989
Polyselenomethylene, hexagonal, preparation of, 843
Polystyrene, and rubbers, graft copolymers of, prepared with "living" polymers, 641
thermal degradation of, 855
Polytetrafluoroethylene, effects of γ-irradiation in, filled with carbon black, 635
thermal conductivity, 767
Poly(tetramethylene oxide), dielectric permittivity of, 761
Polyurethanes, aliphatic, saturated and unsaturated, 1053
Poly(vinyl acetate), and poly(vinyl alcohol), NMR spectra of, 39
tacticity and infrared spectra of, 551
Poly(vinyl alcohol), and poly(vinyl acetate), NMR spectra of, 39
sulfonamido acetals of, alkali-stable thermoreversible gels derived from, 73
Poly(vinyl bromide), crystalline, 271
Poly-N-vinylcarbazole–iodine charge transfer complex, photovoltaic effect in, 445
Poly(vinyl chloride), fractionation of, by solvent extraction, 239
low molecular weight, single crystals of, 433
modified, effect of UV irradiation on the glass transition temperature of, 1095
Poly(vinylidene fluoride), solution-grown crystals of, 465
Poly(vinylidene fluoride)–poly(vinyl fluoride) mixtures, melting temperature–composition curves of, and vinylidene fluoride–vinyl fluoride copolymers, 917
Primary radicals, possible termination by, in homogeneous polymerization, 677
Propylene–ethylene copolymer and crystalline paraffins, interaction between, 1047
Propylene sulfide, asymmetric-selection polymerization of, 1073
Proteins or amino acids, riboflavin-sensitized photopolymerizations of acrylic monomers in the presence of, 595
Proton signals, methylene, assignment of, and estimation of the meso to racemic methylene ratios in polyacrylonitriles, 703
Pyrolysis and polymerization of poly-1,2-dihydronaphthalene, 721
Radiation-induced cationic polymerization of isobutene, 569
Radiation-induced ionic polymerization of styrene, 1059
γ-Radiation-induced polymerization, in alcohols, polyethylenes formed by, 997
of isobutene, ESR study on, 313
of nitroethylene, mass-spectrometric study in, 329
of some ring compounds in the liquid state, 395
Radical conversion, photoinduced, in γ-irradiated isotactic polypropylene, electron spin resonance of trapped free radicals and, 423
Radical polymerization of vinyl monomers, new initiator sys-

tems for, 697
Radiolysis of poly(ethylene terephthalate), 471
Randomization of orientation of films and fibers, 893
Random polymers, frequency distributions of, 985
Rapid anionic polymerization, polymerization rate constants in, a possible method for determining, 867
Rate constants, polymerization, in rapid anionic polymerization, a possible method for determining, 867
for propagation of polymerization of α-methylstyrene by free anion in tetrahydrofuran and tetrahydropyran, 965
γ-Ray-induced polymerization of vinyl-substituted silanes, 1077
γ-Ray irradiation, branching in poly(methyl methacrylate) obtained by, 687
Reactivities of acrylates and methacrylates, 799
Replication in Ziegler polymerization, 493
Rhodium complex for allene polymerization in polar media, 973
Riboflavin-sensitized photopolymerizations of acrylic monomers in the presence of proteins or amino acids, 595
Ring compounds in the liquid state, radiation-induced polymerization of, 395
Ringed spherulites, deformed, scattering of light by, 901
Rotatory power, polymer, in some linear poly-α-olefines, relationship between monomer optical purity and, 307
Rubber dynamic properties, determination of, using a sinusoidal vibrator and weighted specimen, 653
Rubbers and polystyrene, graft copolymers of, prepared with "living" polymers, 641
Salt intermediates, heteroaromatic polymers via, 941
Saturated and unsaturated aliphatic polyurethanes, 1053
SBR, vulcanizing systems in, 1109
Scattering of light by deformed ringed spherulites, 901
Second transition series metal compounds, reactions of butadiene with, 387
Selenium chemistry, 847
Shear stress, increasing, increase in critical molecular weight with, 69
Sheep-skin collagen, retention of water by, 505
Short side chains, graft copolymers with, 477
Silanes, vinyl-substituted, γ-ray-induced polymerization of, 1077
Single crystal of cellulose, 1043
Single crystal mats of linear polyethylene, solubility of cyclopropane in, 1145
Single crystals, of isotactic poly-3-methyl-butene-1, 907
of low molecular weight poly(vinyl chloride), 433
polybutene-1, form III, melting behavior of, 429
polyethylene, surface structure of, 619
Sinusoidal vibrator and weighted specimen, determination of rubber dynamic properties using, 653
Size distribution of polymer latexes from light-scattering measurements, 1139
Small-angle x-ray studies, signifi-

cance of sizes inferred from, 771
Solid–liquid interface, adsorption of poly(dimethyl siloxane) at, 947
Solids, "low energy," adhesion of, 469
Solid-state polymerization of tetraoxane, trioxane formation in, 65
Solubility of cyclopropane in single crystal mats of linear polyethylene, 1145
Solution-crystallized polyethylene, etching of, with fuming nitric acid, 89
Solution-grown crystals of poly(vinylidene fluoride), 465
Solution-grown lamellar crystals of thermally decomposed isotactic polypropylene, 245
Solution phase, macroscopic, and small voids, equilibrium distribution of flexible polymer chains between, 773
Solvent extraction, fractionation of PVC by, 239
Specific heat of natural rubber and other elastomers above the glass transition temperature, 169
Spectra, infrared, and tacticity of poly(vinyl acetate), 551
Spectroscopy, NMR, analysis of tetrad sequences in vinylidene chloride–isobutylene copolymers by, 285
Spherulites, deformed ringed, scattering of light by, 901
Stereoblock poly(methyl methacrylate), dielectric low-temperature absorption in, 745
Stereoisomers of 2,4,6-tricyanoheptane, NMR spectra of, as model compounds of polyacrylonitrile, 485
Stereoregularity of polyacrylonitrile and its dependence on polymerization temperature, 333
Stereospecific polymerizations, of 2,3-epoxy and 2,3-epithiopropyl methacrylates, 29
of monomers containing oxygen and nitrogen with Ziegler-Natta catalysts, 527
of some optically active monomers, 375
Stirred xylene solutions, melting of polyethylene prepared from, 265
Stress cracking and crystallization in polymers, 959
Structural studies on isotactic polymethacrylonitrile, 459
Styrene, radiation induced ionic polymerization of, 1059
Styrene/N,N-dimethylformamide systems, iron(III)–chloro complexes in, 1119
Substrates, influence of, on wettability, 919
Sulfides, olefin, and olefin oxides, polymerization of, with xanthates, dithiocarbamates, and thiocarboxylates of metals, 793
Sulfonamido acetals of poly(vinyl alcohol), alkali-stable thermoreversible gels derived from, 73
Sulfonates, anthraquinone, as photoinitiators of vinyl polymerization, 361
Sulfonyl isocyanates, reaction of, with polymeric alcohols to produce a polymeric acid, 77
Surface structure of polyethylene single crystals, 619
Tacticity and infrared spectra of poly(vinyl acetate), 551
Temperature dependence of the melt viscosity of crystalline

polypropylene, 295
Tensile tests, hydrogen evolution from natural rubber during, 317
Terephthalonitrile oxide, polymerization of, topochemical study of, 301
Terminal and penultimate models, distinction between, 827
Termination, possible, by primary radicals in homogeneous polymerization, 677
Tetraalkyldistannoxanes as catalysts for urethane formation, 57
Tetrads, of monomer units, NMR signals of, in poly(methyl methacrylate), 225
and pentads, 859
Tetrad sequences in vinylidene chloride–isobutylene copolymers by NMR spectroscopy, analysis of, 285
Tetrahydrofuran-3,3-bis(chloromethyl)oxetane copolymerization catalyzed by $(i\text{-}Bu)_3Al$, 367
Tetrahydrofuran and tetrahydropyran, rate constant for propagation of polymerization of α-methylstyrene by free anion in, 965
Tetraketone, aliphatic, ladder polyquinoxalines from, 989
Tetramer, α-methylstyrene, with electron transfer from carbanion to ketone, 1013
Tetraoxane, solid-state polymerization of, trioxane formation in, 65
Thermal conductivity of polytetrafluoroethylene, 767
Thermal degradation, of poly(acrylic acid), 817
of polystyrene, 855
Thermal polymerization of phenoxy phenols, 277
Thermal volatilization analysis, investigation of copolymers and blends by, 719
Thermogravimetric rate and conversion data, initial kinetic parameters from, 191
Thermoreversible gels, alkali-stable, derived from sulfonamido acetals of poly(vinyl alcohol), 73
Thiocarboxylates, dithiocarbamates, and xanthates of metals, polymerization of olefin oxides and sulfides with, 793
$Ti(O\text{-}n\text{-}Bu)_4$–$AlEtCl_2$–donor catalyst systems, copolymerization of vinyl chloride with ethylene by, 401
$TiCl_4/AlEt_2Cl$ catalytic system, 523
Time dependence of crystal orientation of polyethylene, 339
Titanium trichloride and triethylaluminum, reaction between, 537
Topochemical study of the polymerization of terephthalonitrile oxide, 301
Triads and diads, 859
Transition metal derivatives, polymerization by, 785
Trialkylaluminum/Co compound, high cis-polymerization of butadiene by, organic halides in, 415
2,4,6-Tricyanoheptane, stereoisomers of, NMR spectra of, as model compounds of polyacrylonitrile, 485
Triethylaluminum dissociation, 79
Triethylaluminum and titanium trichloride, reaction between, 537
Trinitrates, cellulose, gel permeation chromatography, calibration, and distributions of, 495
1,3,5-Trioxacycloheptane formation

in cationic polymerization of 1,3-dioxolane, 583
Trioxan, polymerization of, the activity of some novel catalysts for, 625
Trioxane formation in the solid-state polymerization of tetraoxane, 65
Tris(ethylene terephthalate), cyclic, 1057
Two-dimensionally crosslinked poly(methyl methacrylate), association of, 691
Unfractionated vinylpyrrolidone–vinyl acetate copolymers, application of high speed membrane osmometry to, 851
Universal calibration for gel permeation chromatography, 753
Unsaturated and saturated aliphatic polyurethanes, 1053
Urethane formation, tetraalkyldistannoxanes as catalysts for, 57
UV irradiation, effect of, on glass transition temperature of modified PVC, 1095
Vanadium oxytrichloride–aluminum compound system, polymerization of vinyl chloride with, 1125
N-Vinyl carbazole, reactions of, with anionic initiators, 407
Vinyl chloride, copolymerization of, with ethylene by the $Ti(O\text{-}n\text{-}Bu)_4$–$AlEtCl_2$–donor catalyst systems, 401
polymerization of, with vanadium oxytrichloride–aluminum compound system, 1125
Vinyl copolymerization, ESR studies of, in aqueous solution, 83
Vinyl ether–iodine system, free radicals observed in, 449
Vinyl fluoride–vinylidene fluoride copolymers, 917
Vinylidene chloride–isobutylene copolymers, analysis of tetrad sequences in, by NMR spectroscopy, 285
Vinylidene fluoride–vinyl fluoride copolymers, 917
Vinyl monomers, liquid, electric field polymerization of, 969
radical polymerization of, new initiator systems for, 697
Vinyl polymerization, initiation of, by systems of activated metals and organic halides having various types of halogen bonds, 835
photoinitiation of, by azido pentaamine cobaltic chloride, 357
photoinitiators of, anthraquinone sulfonates as, 361
Vinylpyrrolidone–vinyl acetate copolymers, unfractionated, application of high speed membrane osmometry to, 851
Vinyl-substituted silanes, γ-ray-induced polymerization of, 1077
S-Vinylsulfonyl ylids, 1039
Vinyl type polymerization of butadiene and isoprene, catalyst for, 1007
Viscosity, high micro and macro, media with features of azobisisobutyronitrile decomposition in, 715
melt, of crystalline polypropylene, temperature dependence of, 295
Voids, small, and macroscopic solution phase, equilibrium distribution of flexible polymer mer chains between, 773
Volatilization analysis, thermal, investigation of copolymers and blends by, 719
Vulcanizing systems in SBR, 1109
Water, initiation by, 577
retention of, by sheep-skin col-

lagen, 505
Weighted specimen and sinusoidal vibrator, determination of rubber dynamic properties using, 653
Wettability, influence of substrates on, 919
Wide-angle x-ray diffraction, degree of crystallinity of linear polyethylene from, 925
Xanthates, dithiocarbamates, and thiocarboxylates of metals, polymerization of olefin oxides and sulfides with, 793
X-ray diffraction, wide-angle, degree of crystallinity of linear polyethylene from, 925
X-rays, 4–15 ke.v., Penton as dosimeter for, 977
X-ray studies, small-angle, significance of sizes inferred from, 771
p-Xylene chloride, reaction of, with bases to form polymers, 565
Xylene solutions, stirred, melting of polyethylene prepared from, 265
Ylids, S-vinylsulfonyl, 1039
Ziegler-Natta catalysts, stereospecific polymerization of monomers containing oxygen and nitrogen with, 527
Ziegler polymerization, replication in, 493